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WESLEY C. BALLAINE, EDITOR

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WEST COAST LUMBER ENTERS A NEW CYCLE

H. V. SIMPSON

Secretary-Manager,
West Coast Lumbermen's Association

The West Coast lumber industry today is in a state of transition which will have a profound effect on the future economy of this region. We are changing from the harvesting of wild, virgin timber to the orderly cropping of forest products from lands which are managed and protected so that a maximum and continuing crop may be realized.

The removal of the headquarters of the West Coast Lumbermen's Association to Portland after more than a third of a century in Seattle and other Washington cities is one step in this transition. Today Portland is the approximate geographic center of the Douglas-fir region, that area of forest land which lies west of the Cascade Mountains in Oregon and Washington. From this region which is the country's greatest timber-producing land, one-third of the nation's lumber is cut. Portland has other advantages in addition to physical location. It is the headquarters for several private and public agencies with which our organization has constant need for contact.

We are in one phase of a cycle in the handling of our timber assets here in the West. For nearly 100 years the economy of the West has been based on its forests. Because timber is heavy and transportation in the early days was difficult, the cutting of forests was along water ways. Timber accessible to Puget Sound, Grays Harbor, the Columbia and Willamette rivers, and rivers and streams in Washington was taken first. With the development of railroads, loggers went back from the Sound and from the rivers. Timber was plentiful and cheap.

In the past decade, with the development of the logging truck and the improvement of road-building machinery, such as the tractor and bulldozer, practically all timber has been made accessible to market.

Today, even though we still have in the West Coast region 600 billion feet of virgin timber on 14 million acres of prime forest land, we can see the end of the harvesting of wilderness areas. Our problem now is to make certain that all of our forest lands, once relieved of stagnant old-growth timber, will begin growing new forests immediately. Our 600 billion feet stand of old-growth timber is on land which, for all practical purposes, is putting forth no new growth. Immediately back of this stand of wild forests is an area of some 7 million acres of prime forest land stocked with second-growth timber less than 16 inches in diameter. New timber is

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THE FUTURE OF THE FLAX INDUSTRY IN OREGON

VIVIAN ANDERSON

NOTE: *This article is based on a portion of a baccalaureate thesis entitled "An Economic Analysis of the Possible Expansion of Certain Oregon Industries," presented by Miss Anderson for the degree of Bachelor of Science in Economics from the University of Oregon in 1944.*

Oregon, like many states looking to the future, is seeking to expand her industries and to utilize her resources more extensively and efficiently. Only through such expansion can she progress as a state, continue to offer economic opportunity to her people, and contribute to the efforts of a world working for peace and prosperity.

Numerous investigations and reports relating to certain aspects of Oregon's resources and industries have been made by individuals and organizations. One of the enterprises which has been studied from time to time is the flax industry. Although this agricultural crop was grown and spun into cloth by Oregon pioneers a century ago, the flax industry has not advanced as rapidly as some of the other industries in the state.

Oregon has the elements necessary for the growing of flax, as shown by past experience. First, there is fertile soil which has, at the same time, sufficient drainage and good water-retaining capacity. A loam soil with clay subsoil is suitable. Second, the water available for retting is soft and free from mineralization. Third, the climate is moderately cool and damp during the summer, with little or no rainfall during the ripening and harvesting time—the last of July and the first of August. Planting time is during the months of March or April. Flax-growing areas include Turner-Aumsville, Scio, Mt. Angel, Barlow, Mackburg, Yamhill-Dayton, Dallas, and Monmouth.

Statements from flax experts (both American and foreign) testify that Oregon's flax ranks among the best in the world. The required length of the plant is 26 inches; often the crop in Oregon is 30 inches or more and is quite uniform in length, which is surprising to foreign experts. In 1941, over 87 per cent of the flax produced was 30 inches or more in length.[1]

Although seed flax is cut with a binder or a combine, fiber flax is pulled; the linen fiber extends into the root and the entire plant must be sent to the retting mills. The flax must be pulled before it is too ripe, but still not green. Since the harvesting period is short, speed is important. When pulled by hand, the process is too slow and expensive—a factor which has been one of the handicaps in the past. The cost of pulling machines is high, but the government has purchased some of them

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[1] F. E. Price, *Fiber Flax Production and Processing in Oregon*, Oregon State College, 1945, p. 3.

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to aid the farmers. Approximately 12½ acres per day can be pulled by tractor-drawn machines.

Flax fiber is used for fine linens which include household linens, shirtings, dress goods, lace, knit underwear, linen fire hoses; for crash goods (coarse linen) such as toweling; for thread to be used for such purposes as shoemaker's and bookbinder's thread; for seine twine, wrapping, binding, hop, and sacking twine; for fish lines and netting. Flax tow can be used for upholstering stuffing, packing crockery and glassware, insulating refrigerators and refrigerating cars, and for building paper. Flaxseed is widely used for linseed oil and some is made into oil cakes (stock food). Much of the seed flax straw in France and in the central northwest section of the United States is made into cigarette paper.

The cultivation of the flax depends partly on the purpose for which it is to be used. Approximately two-thirds of the world's flax is grown for seed, only one-third for fiber. In the United States, Argentina, and India, flax is grown mostly for its seed. Russia, on the other hand, grows from 80 per cent to 90 per cent of its crop for fiber. The Baltic countries, Poland, and Russia produced 85 per cent of the world's supply of fiber during the years just preceding World War II. In the United States, only Oregon and Michigan have grown fiber flax in quantities large enough to be important, although a few other states, such as Washington and South Carolina, have attempted its production. It is interesting to note that, in the *1943 Agricultural Statistics* published by the United States Department of Agriculture, Oregon is the only state for which figures on fiber-flax production are given.[2] They are as follows:

Year	*Acreage Harvested (Acres)*	*Yield Per Acre (Tons)*	*Production (Tons)*	*Price*
1936	2,540	2.02	5,120	$25.00
1937	2,750	1.57	4,324	27.00
1938	3,880	.68	2,622	20.00
1939	3,900	1.44	5,600	35.70
1940	7,300	1.18	8,615	50.65
1941	11,000	2.17	23,825	58.00
1942	18,000	2.22	40,000	55.00

The wartime need for flax is shown by the great increase in production in 1941 and 1942 when compared with the 1940 crop.

Statistics for fiber production of the six leading countries are given below:

FIBER PRODUCTION[3]
(in 1,000 lbs.)

	1940	*1941*	*1942*
North Ireland	166,643	262,080	277,695
Great Britain	81,850	151,563	178,895
United States	17,200	48,000	78,100
Rumania	10,141	24,251	24,000
New Zealand	797	11,200	22,400
Canada	5,987	12,394	17,462

No official figures for 1941 and 1942 were released for Russia; in 1940 Russia produced 1,410,944,000 pounds. The German invasion undoubtedly caused destruction of many fields, but it is believed that Russia is now restoring her flax industry. Likewise no figures are available for Poland since her occupation by Germany. The removal of these two countries from the world's market has given the other countries opportunity and incentive to increase their production, particularly since the demand for textiles of all kinds has caused prices to rise. Whether or not these countries can maintain production at this level remains to be seen.

In the United States Minnesota produces the largest number of bushels of flaxseed. The following table shows the flaxseed production of the three leading states, plus Oregon, Washington, and California. It must be remembered that the larger-producing states are interested primarily in linseed oil.

FLAX SEED PRODUCTION (1939)[4]

	Acreage	*Total Production (bus.)*	*Ave. Bu. Per Acre*	*Total Value*	*Average Value Per Bu.*
Oregon	5,700	60,389	10.6	$ 97,279	$1.61
Washington	10,629	90,641	8.5	150,939	1.67
California	79,754	1,481,077	18.6	2,405,478	1.62
Minnesota	1,211,375	11,692,840	9.7	16,975,676	1.45
North Dakota	312,052	1,602,847	5.1	2,341,962	1.46
South Dakota	146,863	1,304,809	8.9	1,889,714	1.45

A quite new use for fiber from seed flax is burlap bagging. The necessity of finding a substitute for jute and hemp has caused the State Engineering Experiment Station at the Georgia School of Technology in Atlanta to experiment with flax.[5] It was found that flax yarn was superior to any other substitute for jute and could be used for raw-sugar bagging, twine, cordage, and non-textile purposes. In some cases, raw-sugar bags from flax were even better than those made of jute.

Flax tow is also used for stuffing upholstered furniture and in car seats, for which there is a large market in the Great Lakes area. Tow is the name of the fiber that is roughly prepared from seed flax or from coarse fiber flax. In the spinning trade, the term refers to the short fiber that is combed from the long fiber. High freight rates and competition from Spanish moss limit the market.

Fish-net twine and gill nets made from flax have a good market here on the Pacific Coast and in Alaska. With the restocking of streams and rivers, with the formation of plans for future preservation of the fishing industry, and the necessity for regular replacement of nets, fishermen will provide a fairly stable market. The Miles Linen Company in Salem manufactures only gill netting and shoe threads.[6]

Oregon industries, such as the sacking and packing of agricultural products, have provided a large market for twines. The amount used varies from year to year but in the past as much as 700,000 pounds have been used annually. Of this amount Oregon has furnished from 100,000 to 200,000 pounds.[7] There are differences

[2] United States Department of Agriculture, *Agricultural Statistics 1943*, pp. 113-119.

[3] *Ibid.*, pp. 113-119.

[4] U. S. Census, 1940, *Agriculture*, vol. III, pp. 754-755.

[5] Engineering Experiment Station, Georgia School of Technology, *Spinning Flax for Bags on Cotton Mill Machinery*, 1943, pp. 1-4.

[6] Letter from Miles Linen Company, 2150 Fairgrounds, Salem, Oregon, Jan. 23, 1945.

[7] A. L. Lomax and Theodore Van Guilder, *Marketing and Manufacturing Factors in Oregon's Flax Industry*, University of Oregon, 1934, p. 7.

of opinion on the quality as compared with twine procured from the East; but if the quality is inferior, it surely can be improved. There is no reason why Oregon can't produce as good a twine as other areas. It has been stated that flax is superior to cotton for hop twine.

The manufacture of fine linens has not been greatly developed in Oregon, partly because of the lack of skilled workmen and a limited market. These linens are costly and they must compete with cheaper, finely woven cotton goods. At present cotton goods are high in price, but is is an abnormal condition.

Fine linens, however, have an excellent reputation. To women consumers, "linen" means a material of high quality and long-wearing capacity. Linen is tough, nonelastic, free from lint so it can be used as a sanitary textile; it has the smooth surface desirable for table cloths, napkins, and sheets. Some encouragement for a good market is found in the fact that depleted shelves of household linens of the war years will have to be filled.

Coarse linen goods, such as crash toweling, may find a wider market since they are lower in price and can compete with cotton and other textiles. However, comments have been made that the poor quality of the crash toweling has hindered its sale. If these statements are true, Oregon need not be discouraged, for with research and training the defects can be overcome.

One of the difficulties facing the linen industry is that of perfecting machines which can produce as good a linen fabric as that obtained by hand labor. Although progress has been made, much highly skilled labor is still required. Europe has developed mechanical processes to some extent, but still uses hand labor which, through many years of experience and skill, produces linen of the finest type.

Oregon now has a much greater producing capacity than she had before the war, but to use it she must sell her flax to spinning mills in other parts of the world or increase the number of her own linen mills. Linen mills, in turn, must find their markets now that the government's war demands have diminished.

Some of those in the industry are quite pessimistic concerning the future of flax in Oregon and believe that there will be little expansion. Nevertheless, the industry has come a long way. If Oregon will take advantage of her present position and of the fact that she is one of the very few states in the country in which fiber flax can be successfully grown, she can establish a thriving industry.

In the past, the flax industry has had obstacles in the form of inadequate processing facilities, lack of market outlets, inability to attract private capital, and lack of trained technicians. The first obstacle has been partly overcome through the building of processing plants, the use of pulling machines, and the establishment of a few linen mills. Both the Federal and state governments have given aid, and, at the time three cooperative plants were built in Oregon in 1936, considerable amounts of money were raised by private local interests. However, if the industry is to stand on its feet economically, it must encourage further investment of private capital. Markets need to be developed (for normal times) and workers trained. The most essential step is to find methods of manufacturing flax into finished goods which have market appeal. Leadership with initiative, ideas, and courage to push the manufacture and sale of such goods is needed.

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growing on this land at the rate of 500 board feet per acre per year; in some places it reaches 1,000 feet per acre per year. This growth will produce our next crop in the cycle of forest management and proper harvesting.

We have nearly 4½ million acres of land which is not carrying its share because it is poorly stocked, burned over, or not stocked at all. To restock this land is a matter requiring private and public attention.

What about our forest future here on the West Coast? What can we grow in timber? What are the chances of a well-rounded forest economy?

In the Douglas-fir region we are now cutting mature and overmature timber at the rate of 8 to 9 billion feet per year. From 6 to 7 billion feet go into lumber, and the balance into pulp, plywood, shingles, fuel wood, and other uses. Under present policies of tree farming and sound forest management, as soon as an acre is relieved of its nonproducing old growth it goes back into production, and starts growing more wood for future harvest.

There are, in the Douglas-fir region, 25,790,000 acres of forest land. With all of this vast forest-growing area in full production of young forests, only 8 billion feet per year could be realized, if cutting and burning went on as in the past. However, if all of these lands are cut and protected, as they are under sound forest practices generally used today, forest experts estimate that some 10 billion feet can be harvested. But, if these 25 million acres are *fully and completely managed*, if fires are kept to an irreducible minimum, the region has a potential capacity of 14.5 billion feet of merchantable forest products.

That is the goal today of industry leaders on the West Coast. If future demands for timber products warrant, the lands here, in the most favored timber-growing area in the world, can produce double the present volume.

Equally vital to the future economy of this region is the awakened interest on the part of industry in the utilization of more of the tree, both in the woods and at the manufacturing plants. A great new era of industrial expansion will come to the West when the potential production of cellulose on our forest lands is coupled with the available cheap hydro-electric power and the "know how" which has come out of war-stimulated research laboratories. No other place in the world can produce cellulose as cheaply as our West Coast forest lands.

I firmly believe that one of our greatest assets here in the West is the tremendous growth and regenerative power of our conifers—the Douglas fir, Western hemlock, spruce, and cedars.

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BANK DEBITS

Bank debits represent the dollar value of checks drawn against individual bank deposits. Approximately 90 per cent of all goods, property, and services is paid for by check. Bank debits are regarded as indicators of the general trend of business. The Bureau of Business Research collects bank debits from 92 banks and branches monthly. On occasion, the totals for the same month in different issues of the *Review* are not directly comparable because of necessary adjustment in basic data.

Marketing Districts	*Number of Banks Reporting*	*Debits Sept. 1945*	*Debits Aug. 1945*	*Debits Sept. 1944*	*Sept. 1945 compared with Aug. 1945*	*Sept. 1945 compared with Sept. 1944*
Oregon	86	$636,411,402	$638,204,071	$641,154,172	−0.3%	−0.7%
Portland (Portland, Hillsboro, Oregon City, etc.)	25	429,340,271	448,221,630	454,654,906	−4.2	−5.6
Lower Willamette Valley (Salem, McMinnville, etc.)	9	45,884,109	42,071,277	43,338,944	+9.1	+5.9
Upper Willamette Valley (Albany, Corvallis, Eugene, etc.)	11	48,094,923	45,200,984	39,574,370	+6.4	+21.5
North Oregon Coast (Astoria, Tillamook, etc.)	5	16,534,246	16,492,647	15,857,783	+0.3	+4.3
Douglas, Coos Bay	4	9,293,551	9,921,348	9,871,297	−6.3	−5.9
Southern Oregon (Ashland, Medford, Grants Pass)	5	21,291,178	18,906,362	17,251,575	+12.6	+23.4
Upper Columbia River (The Dalles, Hood River, etc.)	6	12,746,221	10,548,824	10,943,371	+20.8	+16.5
Pendleton area	5	11,420,425	10,684,395	11,618,738	+6.9	−1.7
Central Oregon (Bend, Prineville, Redmond)	3	6,210,534	5,460,995	5,374,158	+13.7	+15.5
Klamath Falls, Lakeview area	4	20,250,336	16,508,503	18,044,659	+22.7	+12.2
Baker, La Grande area	6	10,429,849	9,276,905	9,873,050	+12.4	+5.6
Burns, Ontario, Nyssa	3	4,915,759	4,910,201	4,751,321	+0.1	+3.5

BUILDING PERMITS

Building permits give an indication of building operations planned rather than actual construction under way. Care must be taken, in interpreting these data, to allow for the lag which may elapse between the issuance of the permit and the beginning of actual construction. The data have been collected by the Bureau of Business Research.

	New Residential Sept. 1945	*New Nonresidential Sept. 1945*	*Additions, Alterations & Repairs Sept. 1945*	*Total Sept. 1945*	*Total Aug. 1945*	*Total Sept. 1944*
Albany	$ 15,000	$ 24,500	$ 9,550	$ 49,050	$ 41,800	$ 7,600
Astoria	3,500	25,275	23,170	51,945	45,672	6,970
Baker	.....	9,500	4,700	14,200	2,800	7,950
Bend	12,000	10,995	13,070	36,065	6,925	750
Coos Bay	.....	1,700	3,550	5,250	4,300	100
Corvallis	*	*	*	*	48,255	5,871
Eugene	58,300	227,135	30,753	316,188	136,860	64,177
Grants Pass	*	*	*	*	35,675	6,835
Klamath Falls	.....	85,325	22,655	107,980	48,500	*
La Grande	1,000	450	3,635	5,085	10,975	3,085
Medford	35,200	88,800	15,165	139,165	78,764	6,966
Oregon City	6,000	500	700	7,200	14,280	100
Pendleton	*	*	*	*	6,285	3,420
Portland	383,700	624,140	373,815	1,381,655	909,885	173,545
Salem	*	*	*	*	*	*
The Dalles	.....	1,550	35,950	37,500	152,225	.....
28 other communities	180,250	158,037	35,467	373,754	532,800	115,695
Total	$ 694,950	$1,257,907	$ 572,180	$2,525,037	$2,076,001	$ 403,064

* No report.

RETAIL SALES

The sales of a state-wide sample of 436 independent retail stores, collected by the Bureau of the Census, give an indication of trading activity and retail distribution. These figures are often interpreted as indicating purchasing power.

BY MARKETING DISTRICT

	Sept. 1945 compared with Aug. 1944	*Sept. 1945 compared with Sept. 1944*
Oregon	+8.4%	+7.4%
Portland	+4.2	+5.0
Lower Willamette Valley	+13.0	+8.0
Upper Willamette Valley	+28.8	+34.5
North Oregon Coast	−1.0	−0.1
Douglas, Coos Bay	+0.2	−5.3
Southern Oregon	+18.2	+9.2
Upper Columbia River	+20.4	+2.5
Pendleton	+35.9	−3.1
Central Oregon	+23.8	+18.5
Klamath Falls, Lakeview	+1.7	+3.5
Baker, La Grande	−2.8	−4.3
Burns, Ontario	+9.0	+5.1

BY TYPE OF OUTLET

	Sept. 1945 compared with Aug. 1945	*Sept. 1945 compared with Sept. 1944*
Oregon	+8.4%	+7.4%
Department stores	+11.7	+3.8
Food stores	−.8	+1.6
Eating and drinking establishments	−3.3	+11.8
Drug stores	+2.3	+1.4
Apparel stores	+20.3	+6.0
Motor vehicle dealers	−4.1	+6.6
Furniture, household, radio	+15.5	+19.3
Lumber, building, hardware	+9.1	+21.0

LUMBER PRODUCTION

The West Coast Lumbermen's Association reports that the September 1945 weekly average of lumber production in western Oregon and western Washington was 101,575,000 board feet, a decrease of 10.2 per cent under the previous month and a decrease of 32.2 per cent under the same month a year ago. The weekly average for August 1945 was 113,110,000 board feet, and for September 1944, 149,736,000 board feet.

COMMERCIAL FAILURES

Dun and Bradstreet report that there were four commercial failures in Oregon in September 1945 involving liabilities of $16,000. This compares with no failures in August 1945, and no failures in September 1944.

LIFE-INSURANCE SALES

Ordinary life-insurance sales in Oregon for September 1945 were $6,627,000, which is a decrease of 4.2 per cent under the previous month, and an increase of 14.0 per cent over the same month a year ago. Sales in the United States decreased 7.3 per cent under the previous month, and increased 5.0 per cent over September 1944. Life-insurance data are related to the financial conditions of individuals and particularly businessmen, because life-insurance contracts are a form of savings.